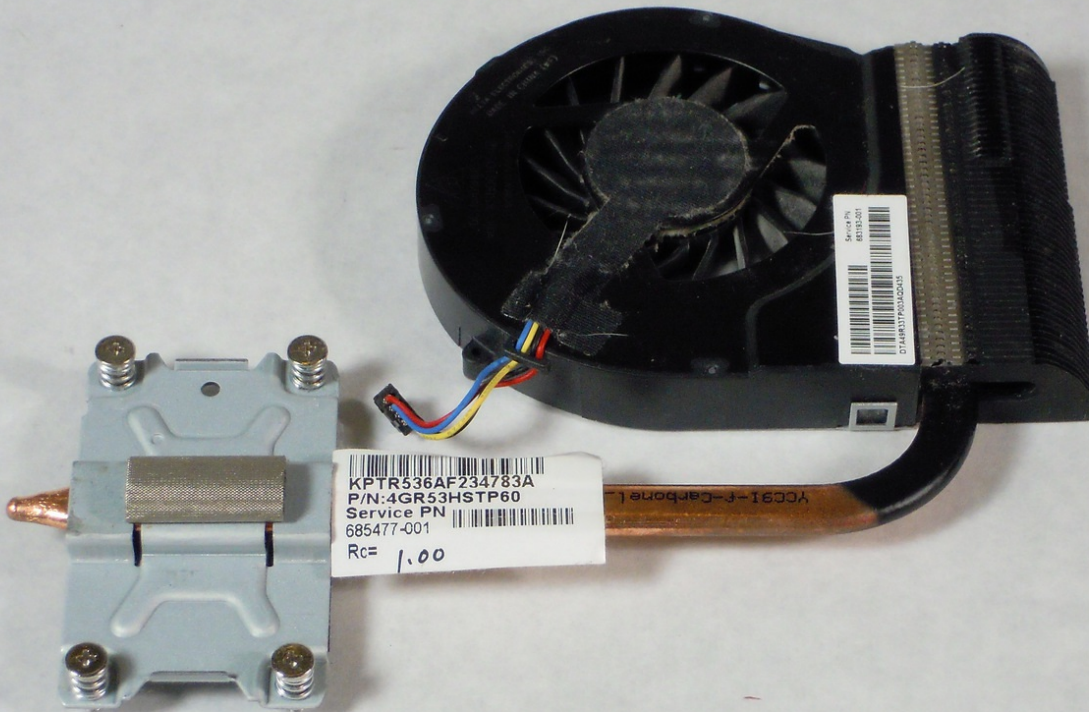


Written By: John Sutton



## INTRODUCTION

Laptop cooking your lap? This guide will walk you through replacing your fan.

For help applying thermal paste, you can reference the [iFixit Thermal Paste Application guide](#).



### TOOLS:

- [Phillips #1 Screwdriver](#) (1)
- [Anti-Static Wrist Strap](#) (1)
- [iFixit Opening Tools](#) (1)




### PARTS:

- [Arctic Silver Thermal Paste](#) (1)

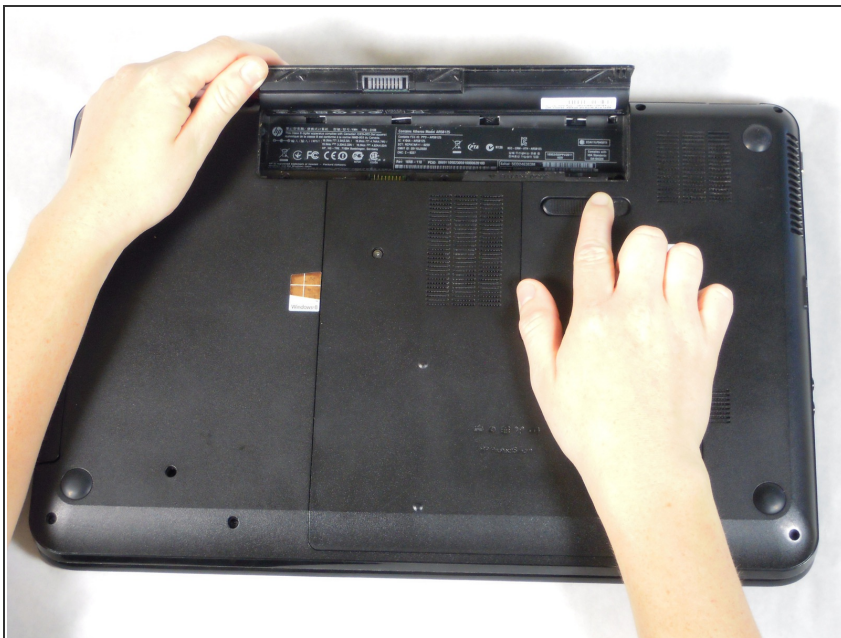
## Step 1 — Battery





 Working on your device while it is turned on may result in electric shock. Make sure to shut down and unplug your device before you begin.

- Flip your device over so the bottom panel is facing up.

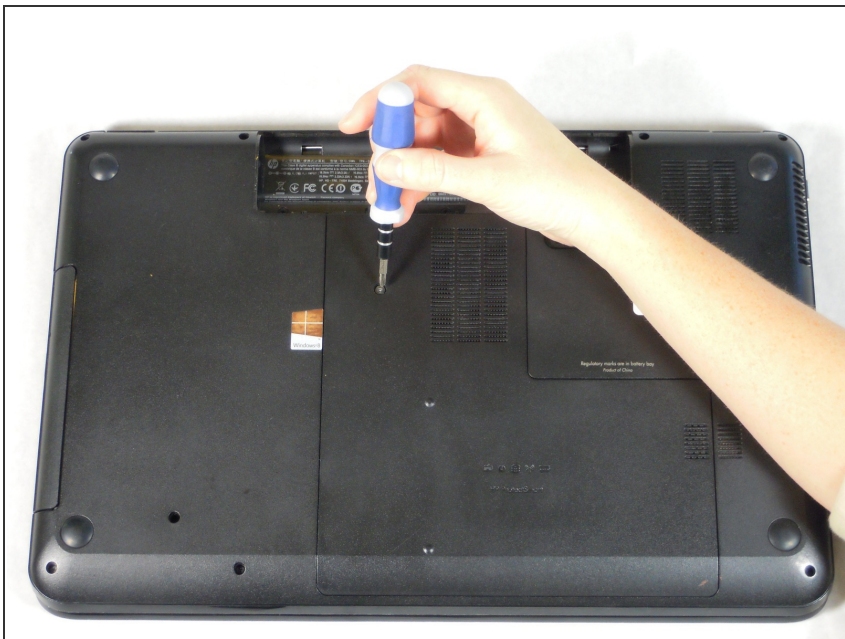
## Step 2



- Slide the lock switch below the bottom right of the battery to the left.
-  The battery is held in by a latch in the front and tabs in the back.
- Lift up the battery, rotating it up and away from you, then pull it out.
-  To put the battery back in, line it up with the battery bay and the holes for the tabs. Then let the battery rotate towards you and press down until the latch engages and you hear a click.

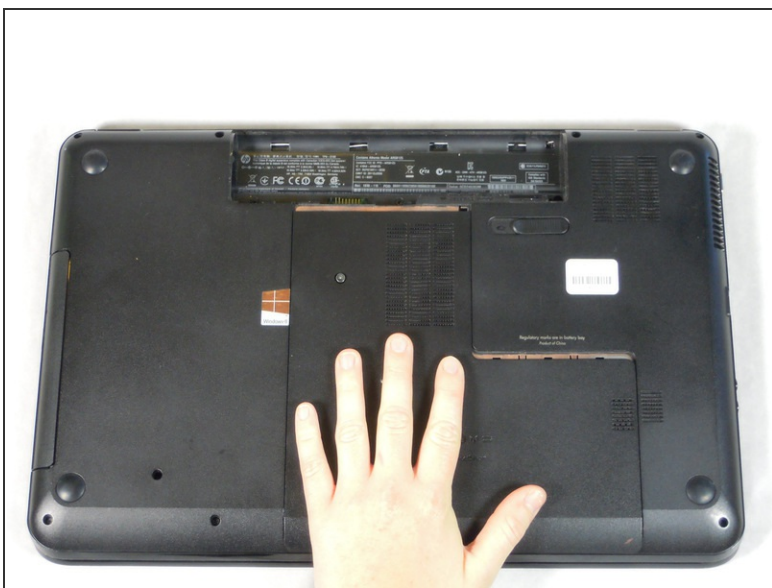


## Step 3 — Back Panel



- Unscrew one Phillips #1 screw from the back panel.
- ⓘ The screw is on a spring and attached to the panel. It will pop up, but will not separate from the back panel.

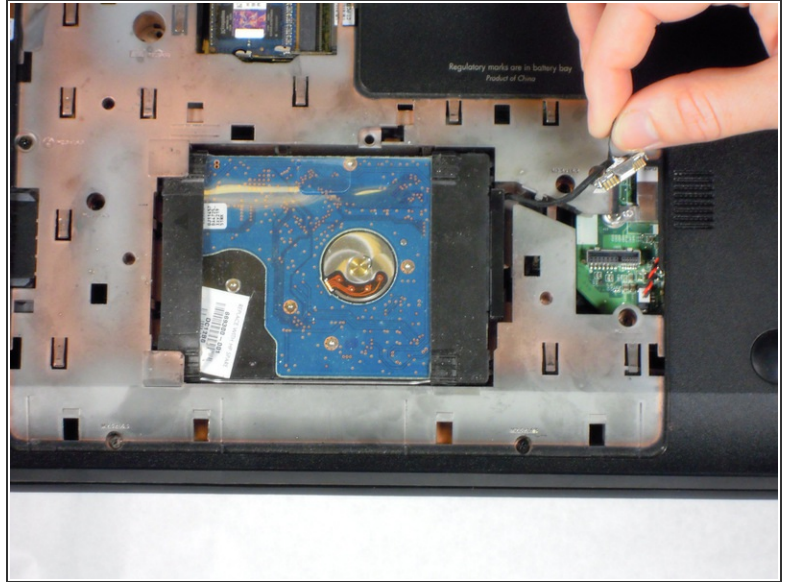
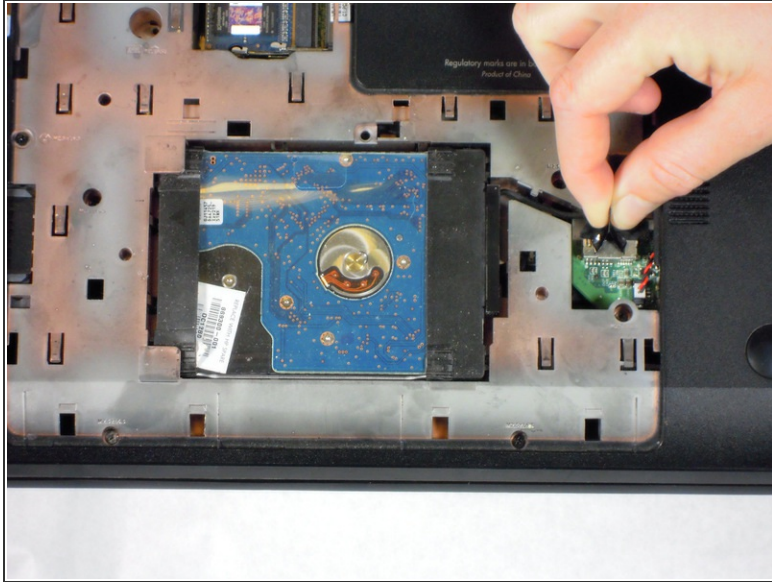
## Step 4




- Slide the back panel down and pull it up.



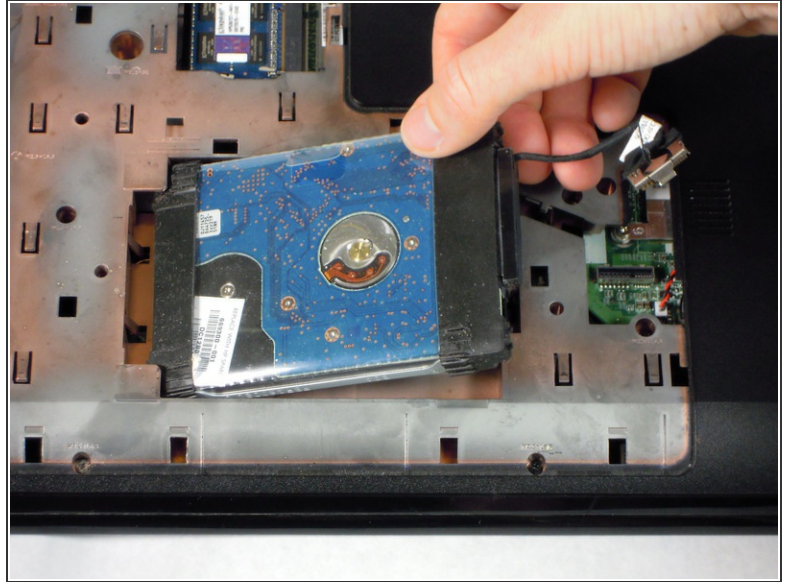
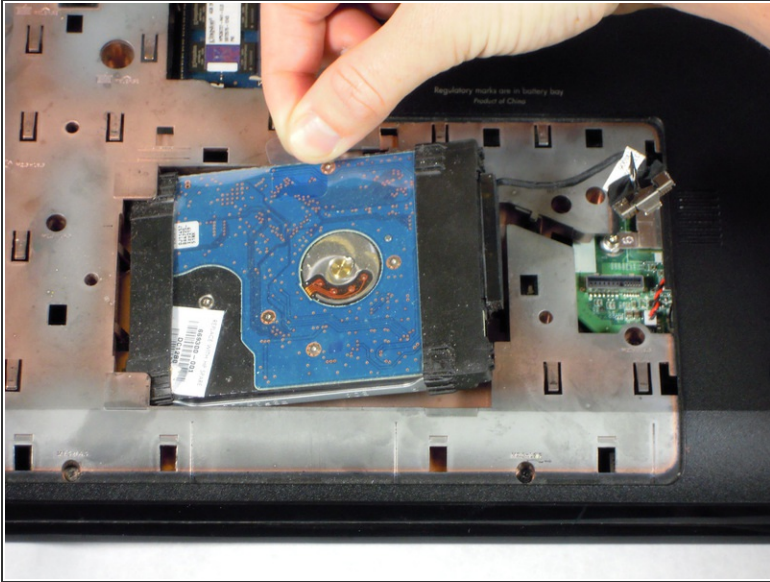
## Step 5 — Hard Drive



 Static electricity can damage the components of your laptop. Make sure you are wearing an anti-static bracelet before you touch the hard drive.

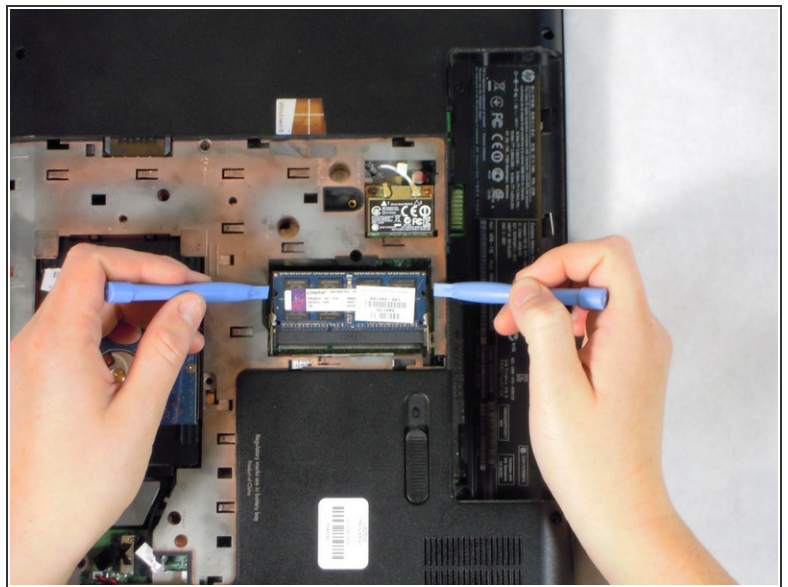
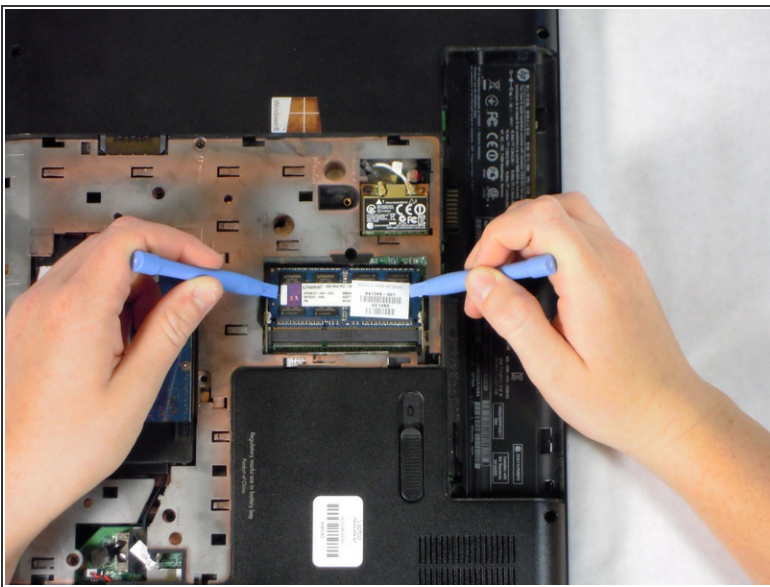
- Using the black tab on the connect and/or a prying tool, lift up to disconnect the black hard drive cable from the green circuit board.
- Pull the black cable up and out of the back panel. This will make taking the hard drive out much easier.

## Step 6



- Gently pull up on the plastic tab attached to the hard drive.
- Pull the hard drive up and to the right to remove it completely from the laptop.

## Step 7 — RAM



- Use your fingers, plastic opening tools, or pliers to pull the silver brackets away from the RAM.
- ❗ The RAM should pop up to a 35 degree angle.



## Step 8



- Gently pull the RAM straight out in the direction it currently is orientated.
- ✦ When inserting new RAM, place the RAM in the black housing at a 35 degree angle (it will fit loosely), then push down until it clicks into the silver brackets.
- ⓘ This computer supports two sticks of RAM. To add a second stick, repeat the above step with the upper black housing. (Ensure that you have the correct size and type of RAM before trying to add it).

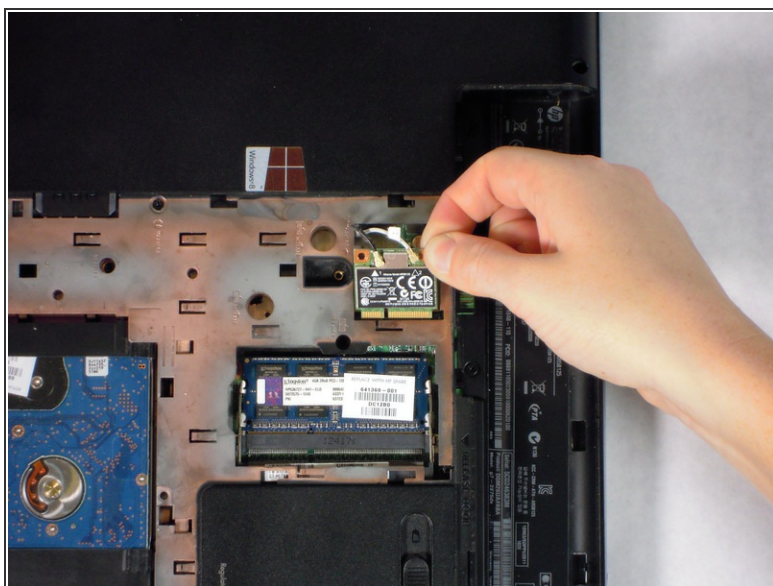
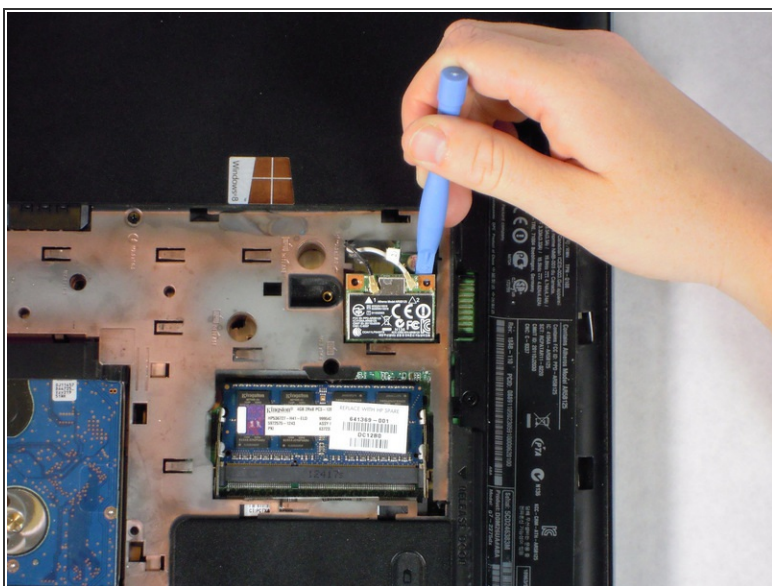


## Step 9 — Wireless Card



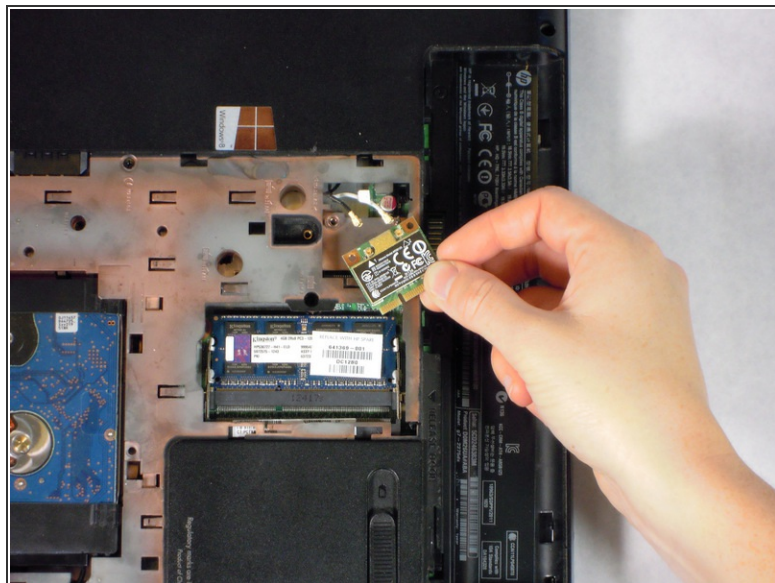
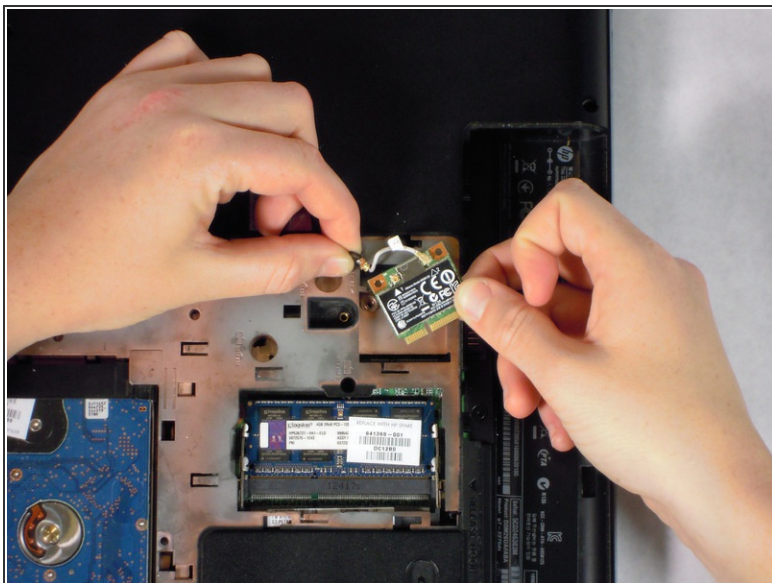
- Use a Phillips #1 screw driver to unscrew the black 4 mm Phillips #1 screw on the wireless card.

## Step 10



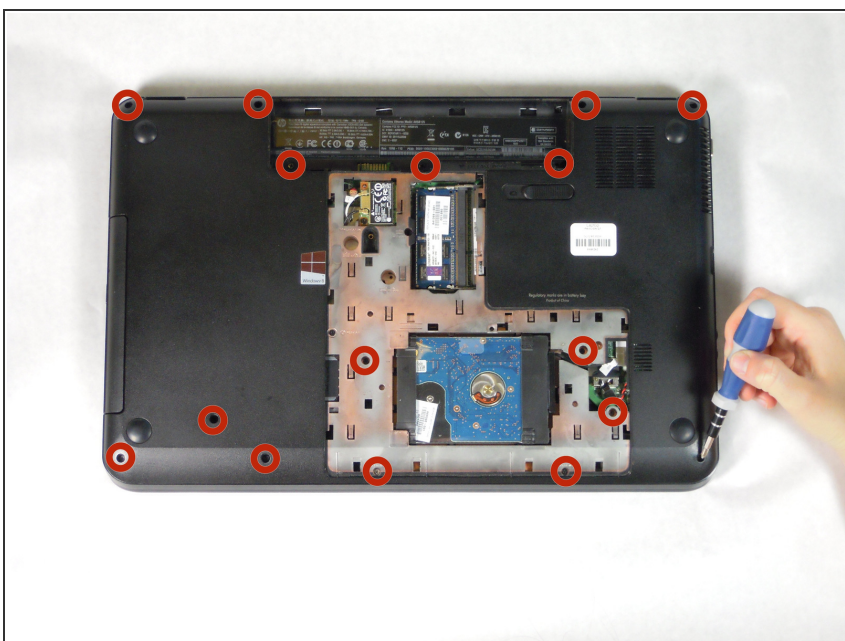
- Use a plastic opening tool to lift the wireless card out of its slot.

## Step 11



- Pull the black and white wires up and off of the wireless card.
- Remove the wireless card.

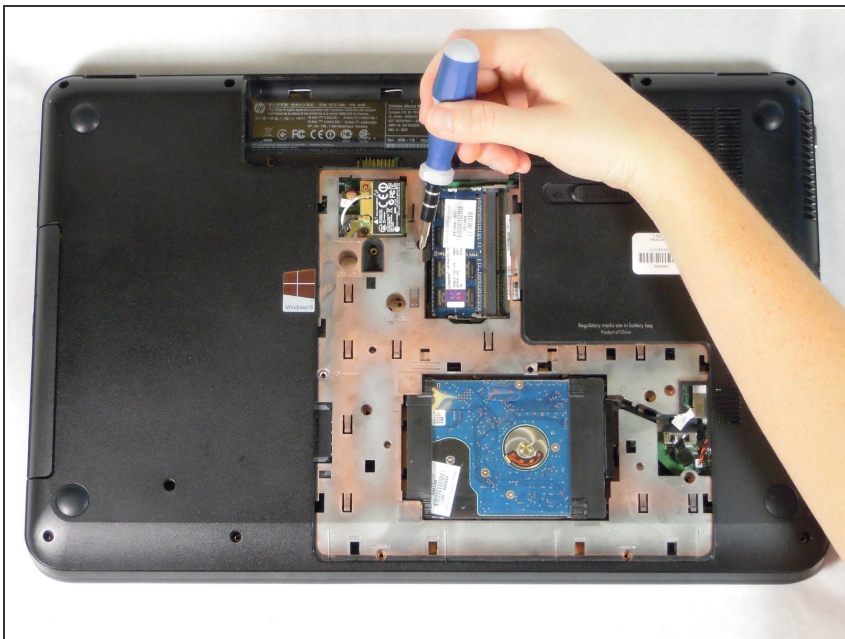
## Step 12 — Back panel screws



- Remove sixteen 7 mm Phillips #1 screws.



## Step 13 — Keyboard



- Unscrew the 7 mm Phillips #1 screw next to the keyboard icon.

## Step 14





- Flip the laptop over and open the screen.



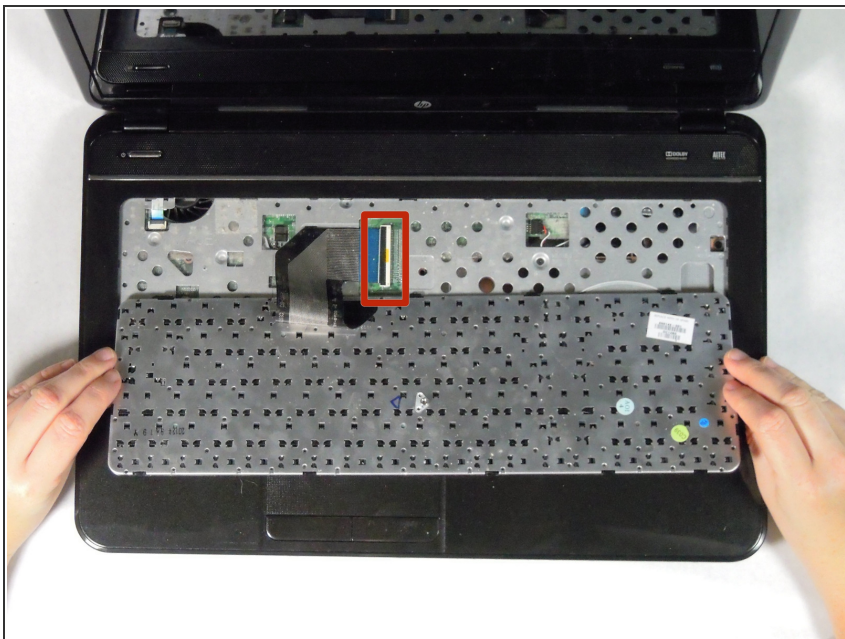
## Step 15



 A ribbon cable is attached to the back of the keyboard. Avoid lifting or moving the keyboard more than a couple inches before you disconnect the ribbon cable or you may damage it.

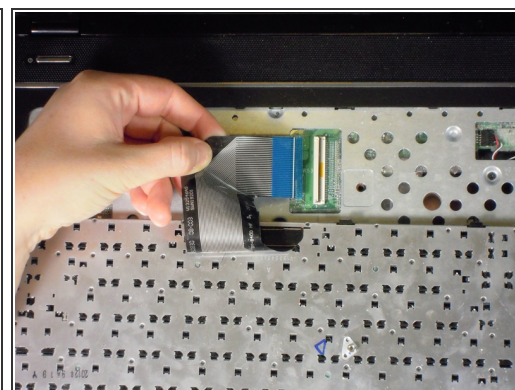
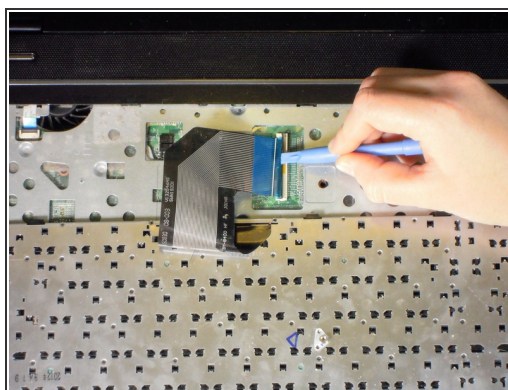
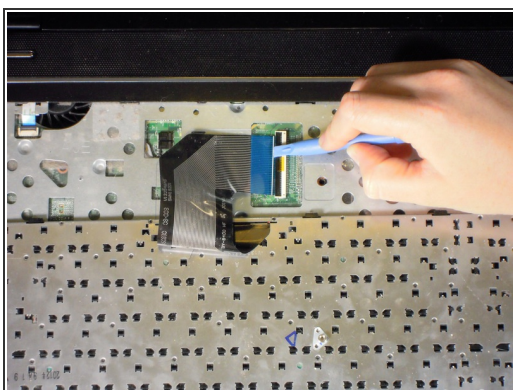
- Carefully pry up one of the top corners of the keyboard with a prying tool. Slide the tool along the top of the keyboard to release it from the housing. Pull the top of the keyboard towards you an inch or two.
-  The keyboard may make some cracking noises as you pry it from the casing. This is expected.
- Pull the keyboard up and away from you, as it is held in by clips in the front. It is not yet disconnected.

## Step 16



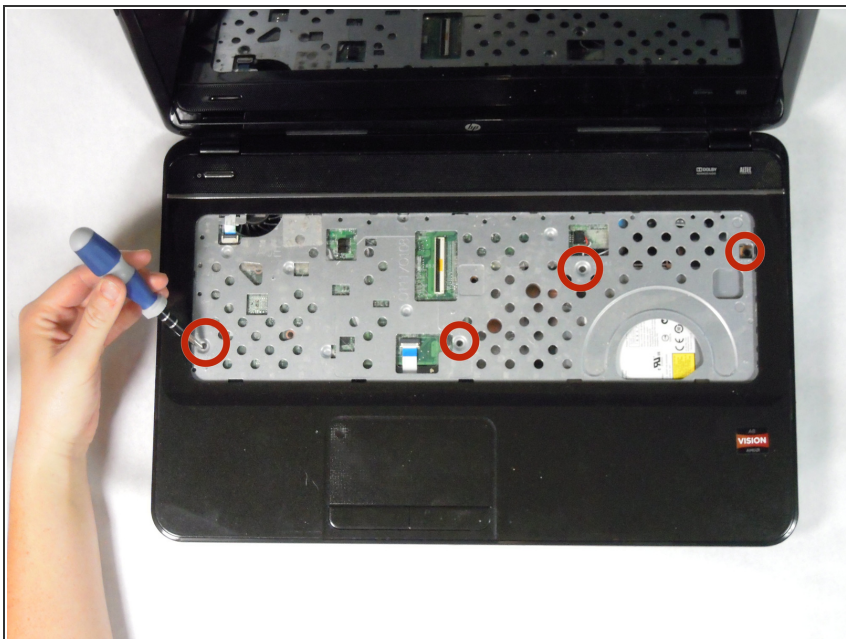
- Gently turn keyboard over, towards you, to reveal the silver cable ribbon.

## Step 17



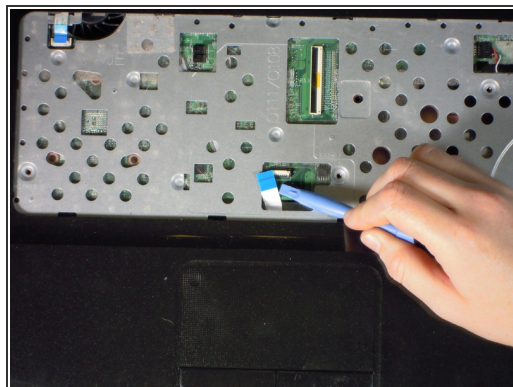
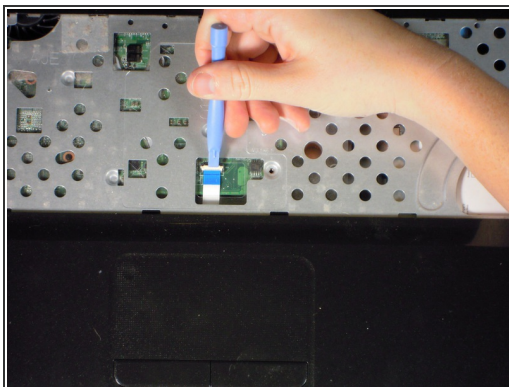
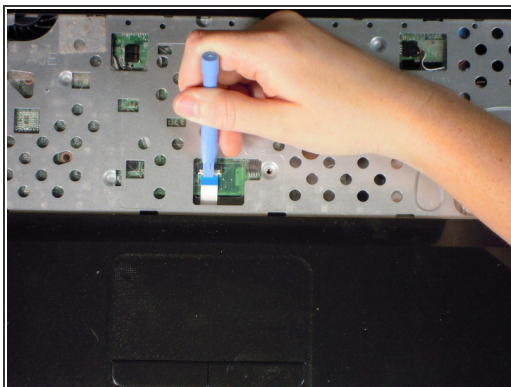
- Using a prying tool, flip the black clip up and to the right. Pull the silver cable out and to the left, the keyboard is now detached from the laptop.

## Step 18 — Front Panel



- Unscrew the four 7 mm Phillips #1 screws on the board.

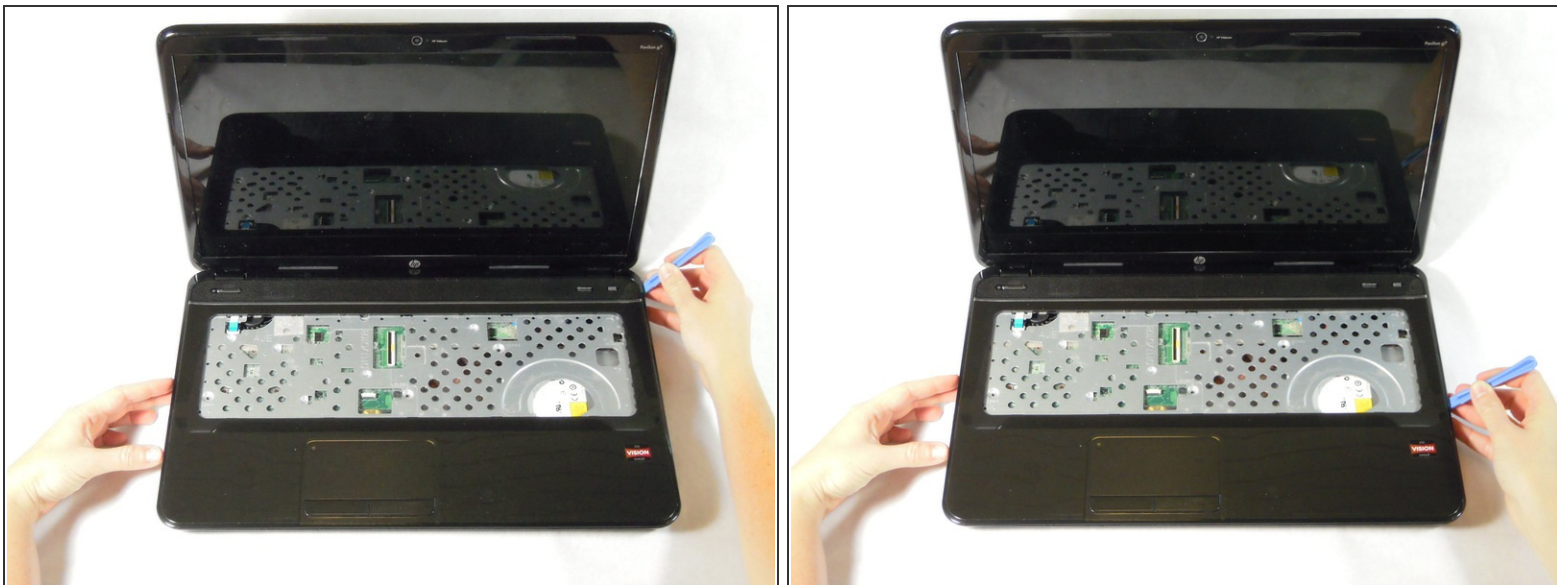
## Step 19



- Use a plastic opening tool to lift the white clip up, towards the screen.
- Pull the white cable with blue head, away from the clip.



## Step 20



- With a plastic opening tool, pry open a side or corner of the top panel. Slide the tool around the rest of the panel to release it from the clips.
- ⓘ If you have to use a large amount of force, you may not have removed all the necessary screws. Double check to ensure you have.
- ⓘ You should hear clips releasing from the board.

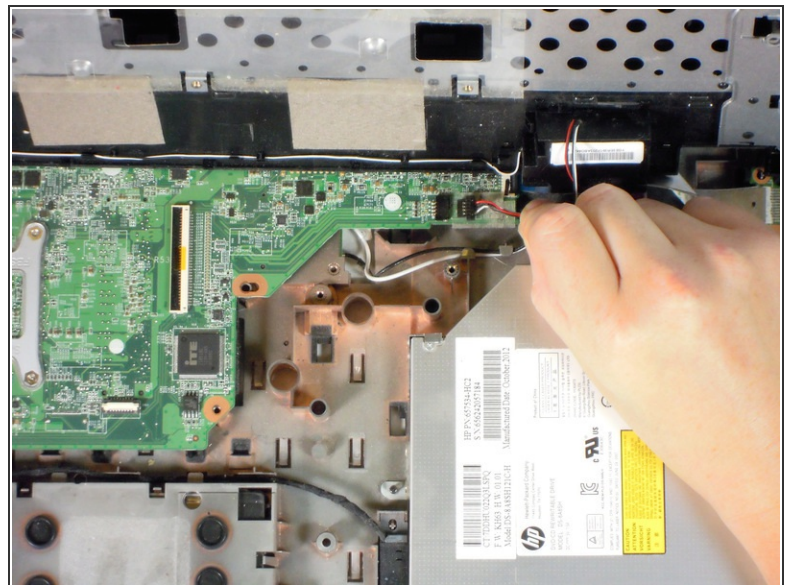
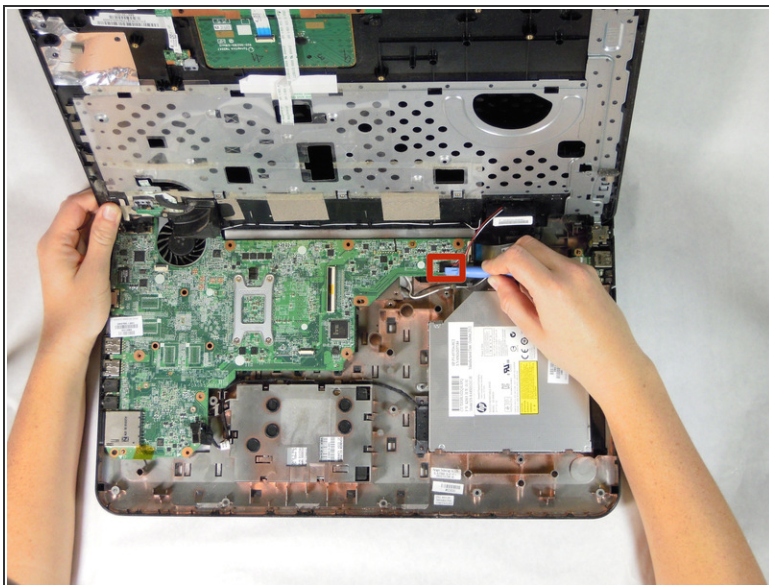
## Step 21



⚠️ Lifting the top panel too quickly or forcefully may damage the speaker cable, which is still attached underneath.

- Rotate the top panel away from you, keeping the back near the hinge of the laptop to avoid damaging the speaker cable.

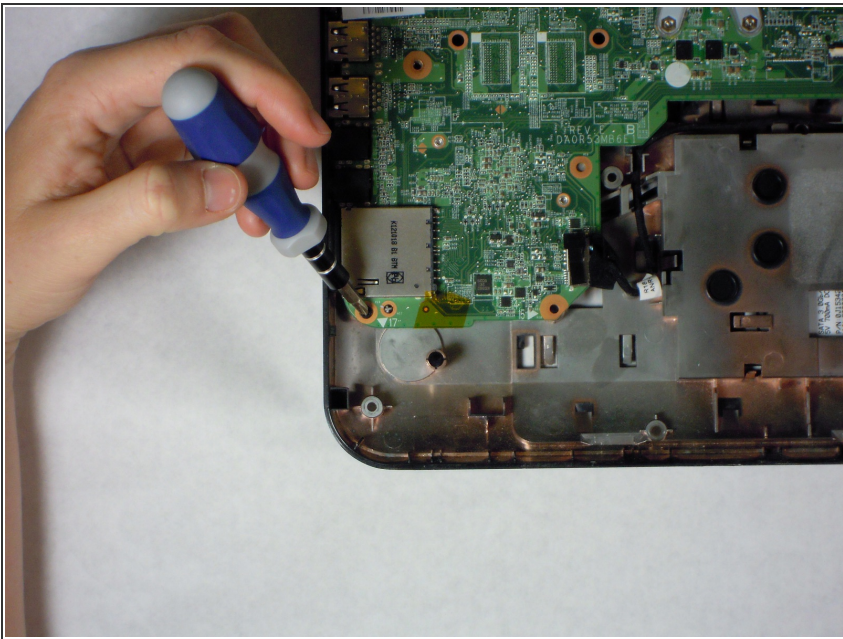
## Step 22



- Using a plastic opening tool, disconnect the black speaker connector from the top right of the motherboard.
- Set aside the top panel until you are ready to reassemble your laptop.

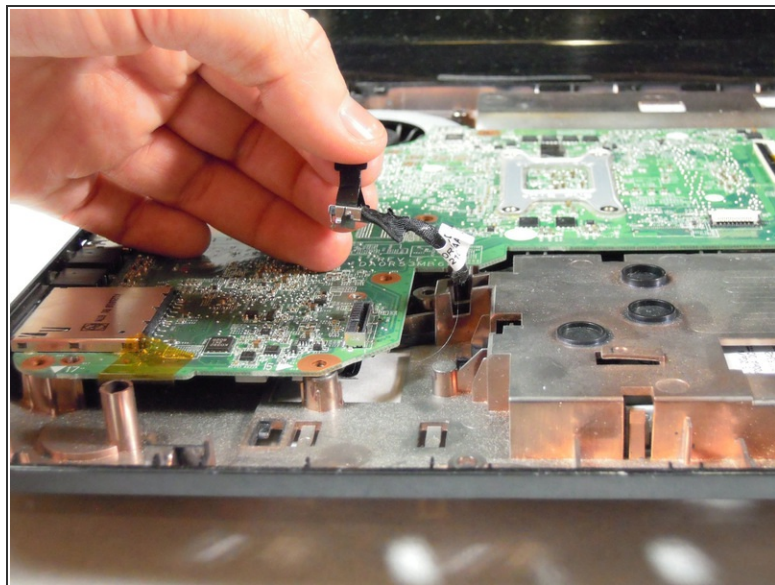
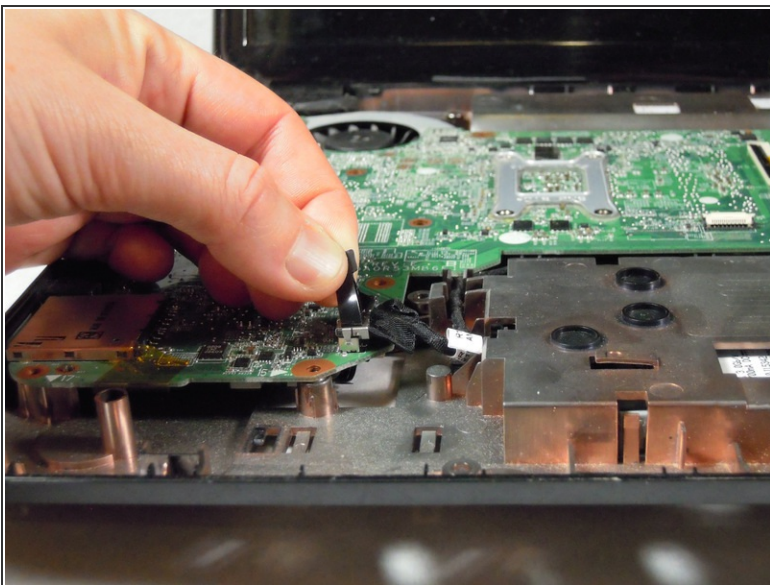


## Step 23 — Fan



- Unscrew one 7 mm Phillips #1 screw from the bottom left corner of the motherboard.

## Step 24



- Lift black tab for the CD drive cable in the bottom left of the motherboard.
- Disconnect it from the motherboard with your fingers or a plastic opening tool.



## Step 25



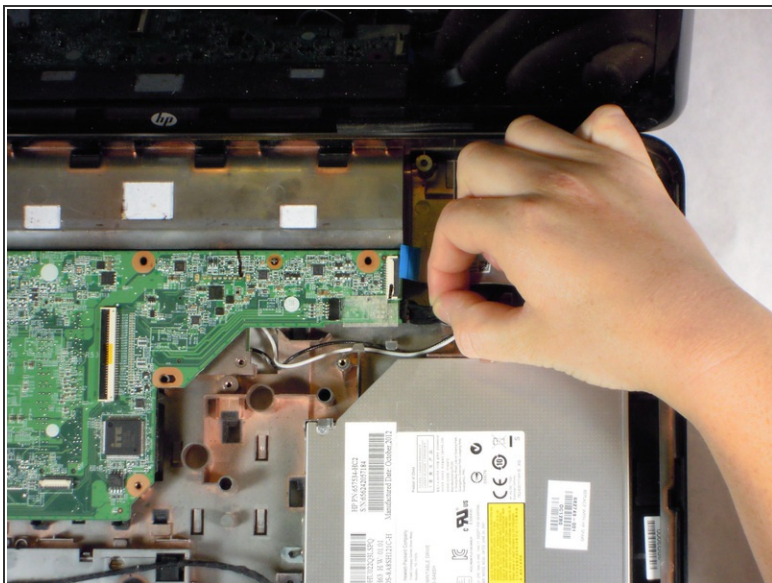
- Lift, with your fingers or a plastic opening tool, the large black monitor cable at the top of the left hand corner of the motherboard.

## Step 26



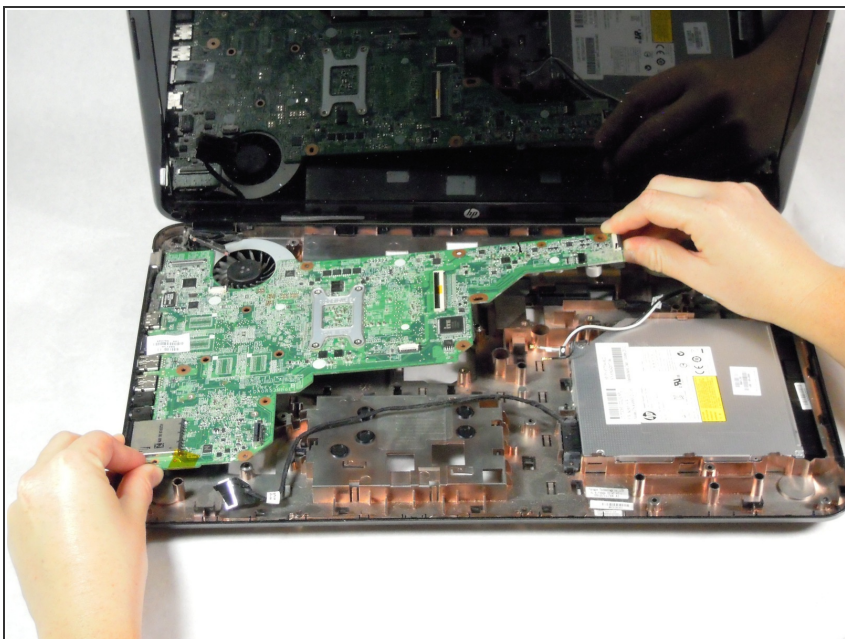
- Use a plastic opening tool to lift the black clip up from the silver cable that's in the upper right hand corner of the computer.
- Pull the silver cable away from the motherboard.

## Step 27



- Using a small amount of force pull the black cable, below the silver cable we just removed, to the right and out of the way.

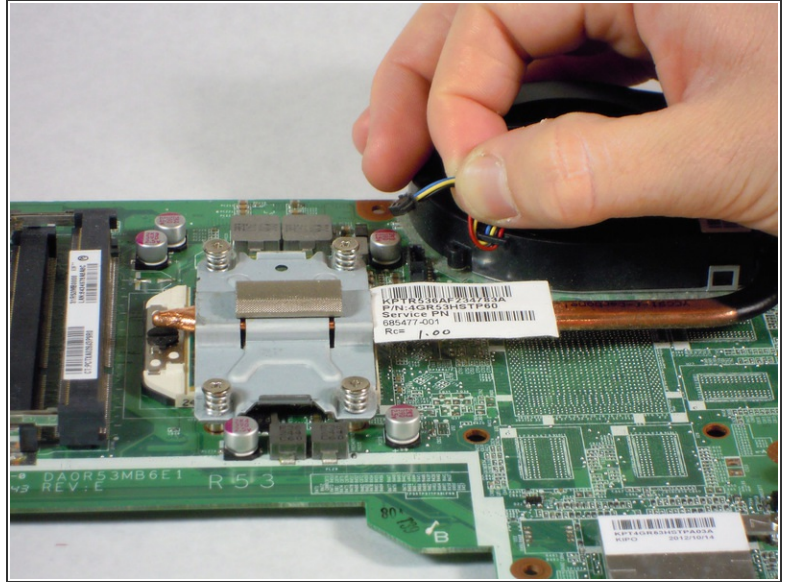
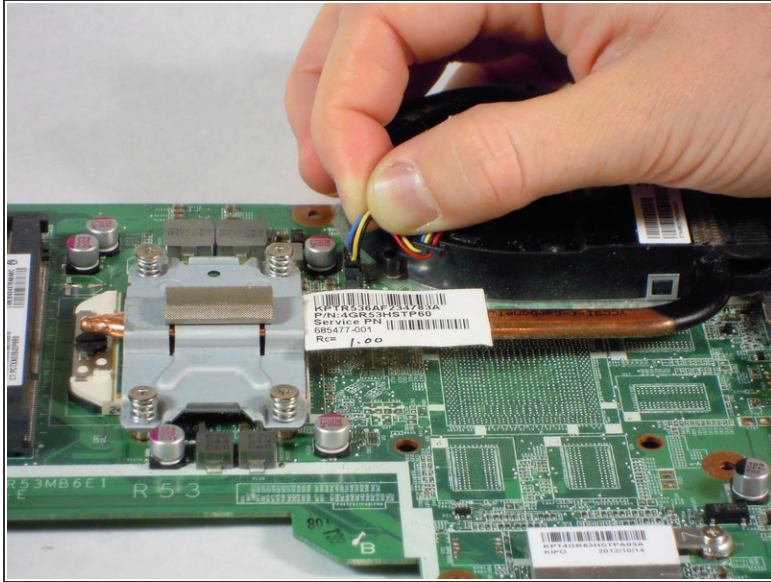
## Step 28



- Lift the right side of the motherboard up at roughly a 45 degree angle and pull to the right to remove it.

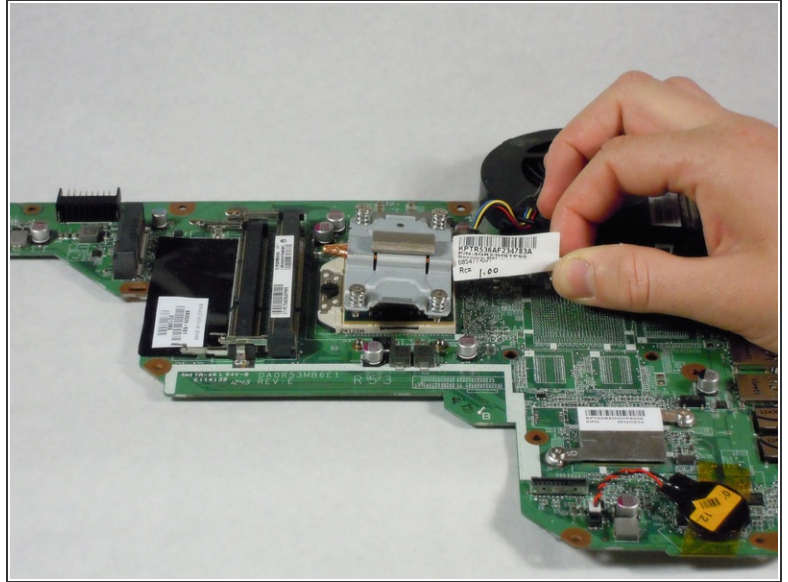
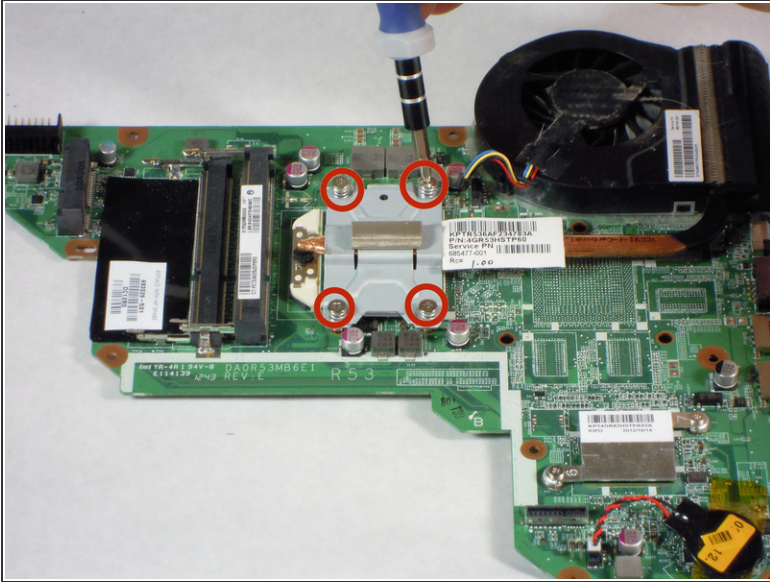



## Step 29




- Now that the motherboard is out, flip it over and begin working on the back side.
- Remove the red, blue, and yellow set of wires from the motherboard.

## Step 30

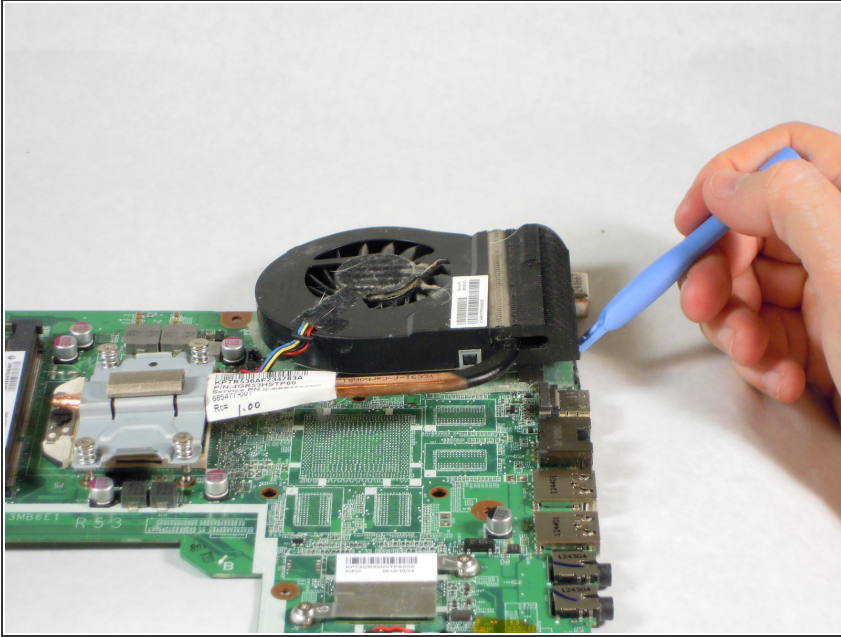


 The screws on the heat sink are held in place by screws and stoppers; they will unscrew, but will not come out of the heat sink. Be careful not to loosen them too much or you may damage the bracket on the back of the CPU.

- Using a Phillips #1 screw driver unscrew the four screws on the heat sink.
-  When tightening the screws during reassembly, tighten them in a cross pattern (start by tightening the upper left screw, then the bottom right screw, then the top right screw, and finally the bottom left screw)
- Lift the bracket up from the motherboard.



## Step 31



- Since the fan is held on with adhesives, you will likely need a prying tool and a small amount of force to lift the fan up and off of the motherboard.
- ☑ Be sure to apply a light coating of thermal paste to the CPU before you screw the heat sink back on. For help applying thermal paste, you can reference the [iFixit Thermal Paste Application guide](#)

To reassemble your device, follow these instructions in reverse order.

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